

American Perestroika

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In the past five years, the desire for freedom and democracy has swept away communist regimes of Eastern Europe and the former Soviet Union. Though he is eclipsed now, it was Soviet President Mikhail Gorbachev who laid the foundation for these changes with reforms he called *glasnost* and *perestroika* and which he thought necessary in his own nation. The subsequent disintegration of the Soviet Union and collapse of the Warsaw Pact as a military threat to the United States and Western Europe made consideration of deep cuts in U.S. defense spending over the next few years possible. President Clinton has promised diversion of resources from the military to domestic projects. Indeed, if these trends continue—and if reform in the newly created countries of the former Soviet Union is not subverted—substantial disarmament could be achieved in the next few decades.

The end of the cold war has ignited in the United States speculation about a possible “peace dividend.” In late 1989, for example, *Business Week* magazine commissioned an economic consulting firm, Data Resources Inc. (DRI), to assess the benefits of cutting the defense budget by 5 percent per year. DRI found that even if this limited peace dividend were to be used to reduce the federal deficit, interest rates would fall, stimulating new investment and enhancing the international competitiveness of American companies.

Though former President George Bush welcomed the changes in Eastern Europe and the former Soviet Union, he did not move precipitously to cut United States defense spending. What if things in Eastern Europe got out of hand, or if Stalinists in Yeltsin’s Russia exploited the ensuing economic instability to return to power? Expressing these concerns, the Bush administration’s budget included only modest reductions in defense spending.

Prospects for future cuts in the defense budget have become more promising, however, with the Clinton administration and the completion of arms control treaties such as the Strategic Arms Reduction Talks (START). Under these circumstances, it is not unreasonable to consider cutting the defense budget by one-third to one-half in real terms during the decade ahead. William Kaufmann, a Brookings Institute defense analyst, has suggested reducing defense spending to \$160 billion from the current level of \$380 billion by the turn of the century.

While there is reason to hope that the “peace dividend” will be realized and that it will provide relief from the current fiscal distress, skeptics point to the disappointing experience after the Vietnam War. Back then, as now, many hoped that peace would allow the nation to conquer poverty, beat inflation, and accelerate economic growth. These observers were disappointed by

the subsequent lack of benefits. Overlooked was the fact that the reduction in the Pentagon's buying power during the mid-1970s (by roughly one-third or \$100 billion in today's dollars) funded a significant increase in Social Security and Medicare benefits that all but eliminated poverty among older Americans. The peace dividend was larger than it appeared at the time particularly because inflation masked the cuts in spending.

Reductions will play a key role in determining the extent of adjustment problems.

Yet, the signs are favorable for cuts in defense spending during the next decade that will exceed the earlier experience. The end of the Vietnam War did not shake the foundations of the international political system. Even as détente flowered in 1972, most policymakers believed that the competition between the United States and the Soviet Union would continue for some time. Today, we are on the verge of a new era. The primary forces that fueled the cold war have disappeared—eliminating the need for a military force designed for global containment of communism. Until recently, the Department of Defense spent roughly 60 percent of the military budget on our NATO commitment alone. The Clinton administration may choose to assume a new international role for the United States. Even then, as the United Nations continues to play a larger role in global peacekeeping, international military operations are becoming increasingly multilateral in scope and operation.

As the prospects for a peace dividend become more tangible, debate continues regarding the economic impact of cutting defense spending. The defense budget represents less than 5 percent of the gross domestic product (GDP). By comparison, military spending consumed almost 40 percent of the national product during the Second World War. At the height of the Korean War, the ratio was 14.4 percent and during the Vietnam War defense spending reached 9.6 percent of GNP. More recently, at the peak of the build-up in 1986, the ratio was 6.6 percent.

In macroeconomic terms, reductions of \$10 to \$20 billion per year will have only a minor impact on a \$5.9 trillion economy. These cuts will amount to no more than two to four tenths of a percentage point of GNP. By comparison, the *New York Times* reported that the paper loss in purchasing power as a result of the stock

market collapse in October 1987 amounted to roughly \$500 billion or 11 percent of GNP. That loss did not send the economy into an immediate recession. (The economy did not collapse largely because the Federal Reserve Board "printed money" and loaned it willingly to replace the buying power lost in the crash.)

What then will be the impact of reduced defense spending in the 1990s? The answer depends on a variety of factors, the most important of which are: 1) the strength of the rest of the economy; 2) the size and pace of cuts; 3) the distribution among major spending categories; and 4) the decisions how to invest the "peace dividend."

Cuts in defense spending come at an inauspicious time. The national economy is just now emerging from a protracted recession. Further reductions in spending will cause mini-depressions in heavily defense-dependent regions of the nation, some of which are already experiencing economic hardship, areas like Boston, the state of Texas, Long Island in New York, and St. Louis. Healthy advances in the national economy could help smooth the transition from defense to civilian production by creating demand and employment opportunities.

Defense Build-Down

The pace and size of Clinton administration defense reductions will also play a key role in determining the extent of adjustment problems. If large cuts are made immediately, we could see a repeat of the problems that occurred during the mid-1970s, when laid-off engineers were forced to work at Burger King. Benefits of reduced defense spending would be particularly pronounced if the budget declines moderately over the next decade. Gradual reductions in defense spending would free resources that could be used to enhance the competitiveness of America's high technology industries. The relative distribution of defense cuts between personnel and investment spending will also help determine the type of adjustment problems that will be encountered during the defense build-down. Currently approximately 40 percent of the defense budget goes for military and civilian personnel. The other 60 percent purchases goods and services. If most cuts are made in the number of troops deployed abroad, the economy will have to absorb individuals with the variety of job skills found in military and civilian government.

Cutting investment accounts—that is, cuts in research and development, procurement, operations and maintenance—would a significant number of manufacturing employees to be made idle. The Department of Defense itself has noted that nearly 75 percent of all defense

procurement is for manufactured products. A congressional research service reported that the top fifty defense-dependent manufacturing sectors produced an average of 15 percent of their total shipments for the Pentagon in 1987. Sixteen of those industries shipped over a quarter of all output to the military. Cuts in defense purchases will obviously affect these particular industries more than the economy as a whole. Most of the cuts have thus far been in the procurement account, with a 57 percent reduction (in constant dollars) from 1985 to 1993.

Employees in the major manufacturing sectors serving the Department of Defense also tend to have higher ratios of professional, technical, and engineering personnel, and receive higher wages than the average manufacturing firm. For example, the Bureau of Labor Statistics reports that in 1980, professional, technical, and engineering employees made up 36.9 percent of all workers in aircraft and parts, 47.3 percent of those in communications equipment, and 86.8 percent of those in guided missiles, compared to 12 percent of workers in all manufacturing.

In 1988, average hourly wages, according to the Congressional Research Service, in defense-dependent industries such as shipbuilding (\$11.59), ordnance (\$11.31), radio and television communications equipment (\$12.26), aircraft and parts (\$13.60), and engineering and scientific instruments (\$10.08) were more than the \$9.29 an hour average wage for all non-farm industries. Finding alternative employment for these highly paid technical workers could complicate adjustment efforts.

Finally, how the peace dividend is ultimately spent will also determine the direction of the national economy. The debate over how to use defense savings has centered on whether it will be used to pay for deficit reduction, cover unfunded government liabilities like the savings and loan bailout, or fund environmental initiatives and the nation's educational system. In truth, it will probably be used for all three purposes—indeed, these are the three competing pressures that are currently driving fiscal policy.

Conversion Versus Adjustment

To the extent that cuts in defense are used to reduce the deficit, interest rates will decline and economic growth and employment will be boosted. While spending on education, environmental restoration, and infrastructure will replace demands eliminated by cuts in defense spending, the economic benefits of these long-term social investments are delayed and the employment generated will be a poor match for those workers

idled by defense cuts. Still, these activities might employ some of the troops mustered out by force structure cuts; and the demand for manufactured goods created by employee purchases could offset defense reductions if the demand is not satisfied by imports.

While the pace of defense reductions is determined by arms negotiations and regional peace talks, as well as the mercurial changes in Eastern Europe and the former Soviet Union, progress toward disarmament could also be slowed by congressional representatives concerned about the local impacts of budget cuts on jobs, bases, and contracts. In 1989 the New York congressional delegation joined with colleagues from Texas and Pennsylvania to protect the F-14 fighter built by Grumman on Long Island and the V-22 tilt-rotor aircraft that is designed by Bell Helicopter in Texas and Boeing-Vertol Company outside Philadelphia. Former President Bush attempted in 1990 to close a substantial number of military bases and end production of a variety of conventional weapons, including the M-1 tank. Yet, during the 1992 election, he sprinkled foreign military sales throughout the country in his effort to win reelection.

Finding alternative employment for highly paid technical workers could complicate adjustment efforts.

The nation is not likely to reap any significant peace dividend until the domestic economics of disarmament is considered. Because weapons production is concentrated in certain industries located in certain regions of the country, and employs highly skilled and highly paid workers, defense cuts could have severe local and sectoral repercussions. For example, fifteen states account for over 70 percent of all defense-related employment in the private sector and civilian federal government.

In eleven industries, including shipbuilding, radio and television equipment, and aircraft, more than 40 percent of all employment derives from defense spending. In addition, some 15 percent of the nation's engineers are employed by defense firms. Cuts in defense spending will be a particular blow to regions such as Southern California, the "oil patches" in Texas and Colorado, and the Route 128 area near Boston, all of which are already experiencing economic decline. How can individuals, firms, and communities cope with the dislocations that accompany

reductions in defense spending? In the case of military base closings, the record indicates that if communities plan for re-use of these facilities, the adjustment will actually add to the vitality of local economies. A survey done by the defense department's Office of Economic Adjustment (OEA) found that in the case of 100 bases that were closed between 1961 and 1986, local communities replaced 93,424 defense jobs with 138,138 civilian jobs; another 7,330 off-site jobs were directly attributable to these base conversions. Still, adjustment is a painful process made more difficult by the requirements for environmental restoration.

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In the case of industrial firms adjusting to declines in demand for defense products, the experience is much less hopeful. Studies dating back to the 1960s have identified the basic problems defense-dependent industries have in shifting their resources to commercial production. In a 1966 study, prepared for the Arms Control and Disarmament Agency, economists at the Denver Research Institute identified three major hurdles to internal development of new products former defense-oriented firms encounter:

1) New products developed by defense firms were generally over-designed and often ran into quality control problems due to inadequate testing.

2) Defense firms tended to mimic marketing approaches used in defense production. For instance, they often based the initial price of commercial products on cost rather than on analysis of what price was appropriate to maximize profits. Defense firms were also unfamiliar with demands of commercial customers who wanted greater installation, service, and maintenance support than defense contractors had been accustomed to providing.

3) The manufacturing process in the commercial product lines often turned out to be a very different problem from what the defense firms were familiar with. In commercial production, the firms produced thousands of units which have very few parts. In defense production, firms produced small numbers of units that have thousands of parts.

In 1985, I was commissioned by the OEA to determine if the experiences of firms adjusting to cuts after the Vietnam War were any different from earlier expe-

riences. I studied six defense firms that initiated special efforts to adjust to defense contract reductions: the Kaman Corporation in Connecticut; Acurex Corporation in California; Boeing Vertol in Pennsylvania; Raytheon in Massachusetts; Ingalls Shipbuilding in Mississippi; and Rohr Industries in California.

Three trends emerged from interviews with key personnel involved with each firm's efforts to adjust to changes in defense demand:

1) planning for adjustment typically began after reductions in defense revenues had become imminent. Kaman Corporation, which began to diversify back in the 1950s, displayed the most foresight of the firms studied; however, planning for their largest new venture, the replacement bearing business, began only after defense-related sales had declined. In addition, the adjustment planning almost never directly involved the workforce most affected by the reductions.

2) in all cases, a substantial share of the firms pre-existing resources, both human and capital, were not reemployed by the new commercial businesses. Raytheon's diversification efforts, for example, employed almost none of the firm's defense workforce. Boeing-Vertol retained the largest number of workers, roughly 500, among the firms studied; yet, this was an insignificant proportion of the 8,700 employees displaced during the late 1970s with the decline in Boeing's helicopter production.

3) few of these firms established competitive positions in the commercial marketplace. Acurex located new government markets but found that business with these clients was just as subject to fluctuation as was the defense industry. Ingalls entered civilian markets that became extinct when energy prices fell. Of the six companies, Kaman had the best track record; diversification contributed to sixteen years of growth in net earnings.

Criteria for Success

None of the experiences met the criteria for being considered a successful example of in-facility economic conversion. Most fit more naturally into the category of corporate diversification efforts. Yet, even recognizing that they represent only an assortment of successful and unsuccessful diversification efforts, these examples allow useful inferences to be made about the likely effectiveness of the conversion approach. To the extent that defense contractors were able to adjust to reductions in defense business, the five factors that follow appeared critical to their success.

- **Leadership.** The more top management was committed to, and actively involved, the more effective the new projects. In the case of the Kaman Corporation,

for example, the firm's president turned his hobby—guitar playing—into a thriving business. Raytheon's president can also be credited with the success of that firm's diversification endeavors. Overbearing management can hinder adjustment efforts, however, as was the case with Rohr Industries.

- **Technology Transfer.** The technical factor most essential to successful adjustment in the case studies was the adaptability of in-house technologies to commercial use. Acurex found new applications for thermodynamics technology previously developed for the Air Force in the fields of pollution control and solar energy research. Kaman, Boeing, and Raytheon also made use of existing corporate technology in new ventures.

- **Market Research.** Development of a market strategy was central to the outcome in each case. Kaman was particularly successful in locating a niche within the mature bearing supply industry. Acurex entered the Environmental Protection Agency and ERDA markets to obtain pollution measurement and energy demonstration contracts. Research and planning improved the prospects for entering new markets, but luck also played a key role—to Kaman's advantage in the guitar business, and to Boeing Vertol's disadvantage when the expected trolley car orders failed to materialize.

- **Acquisition.** Purchasing firms or hiring individuals with skills in those areas of civilian production in which defense contractors tend to be deficient (such as cost engineering, mass production, and marketing) also speeded the adjustment process. Selective acquisitions enabled some of the firms to maximize the commercial uses of their existing capability by reducing the time required for transition to the commercial marketplace. When marketing setbacks hampered its initial diversification effort, Raytheon purchased Amana to operate the "Radarange" line, a spin-off from earlier defense-supported research. Kaman acquired existing firms to create distribution networks for its music and bearing businesses.

- **Persistence.** Time and stamina were integral requirements for successful diversification. New business ventures often did not break even for at least five years. Kaman, for example, launched its guitar line in 1963 but did not see revenues from this new product until the early 1970s. Raytheon was able to diversify successfully during the 1960s in part because of the lessons learned from its failure in the television industry ten years earlier.

It is not entirely clear whether the difficulties encountered by these enterprises are specific to defense contractors. Difficulties in the course of diversification

are common in other sectors as well. The problems discussed below, however, appeared in most of the case studies and would seem to be unique to firms engaged in defense work.

Commercial Production

The firms studied were generally unfamiliar with the special requirements of commercial production. This problem plagued Boeing Vertol's trolley car program. Boeing underestimated the difficulties of developing and servicing a new trolley that was to operate in an antiquated transit system. Rohr, which designed its cars for new transit systems, also encountered difficulties for which it was ill-prepared when designing and building its new generation of rail vehicles.

Another major difficulty is the tendency to introduce commercial products before they were fully tested. Both Rohr and Boeing-Vertol encountered problems after having delivered rail cars before all the bugs were worked out. In their eagerness to enter the mass transit industry, both firms fell victim to optimistic production schedules. Market expectations for the new enterprises were often inaccurate. All three firms, Boeing-Vertol, Rohr and Acurex, overestimated the potential of new government markets. They tooled up to meet perceived national requirements that never materialized. In addition, Boeing and Rohr's initial forays into the transit industry were hampered by the government's failure to establish standards that might have improved the market for mass transit vehicles.

If firms are to adjust to dramatic cutbacks in defense spending, the federal government must be prepared to support new, non-defense markets in fields such as energy technology, waste cleanup, and transportation that might employ significant numbers of systems engineers and manufacturing employees. The Clinton administration is taking significant steps in this direction. Still, military firms entering into civilian markets will require substantial planning and sufficient lead time to overcome the numerous other obstacles to a smooth transition to civilian production.

For example, the case studies clearly suggest that diversification and adjustment require significant reorientation of employees engaged in defense-related work to the demands of commercial business. Retraining is particularly important for engineers and scientists. Congress has considered and adopted a variety of legislative proposals for assisting workers and communities in adjusting to reductions in defense spending. The case studies considered above suggest certain principles that should be incorporated into any additional legislation in the future.

Conversion legislation should provide assistance to communities for adjustment planning. Funding should be provided to support local efforts to assess the impact of defense reductions and evaluate the prospects for re-employment. Once an inventory of these questions has been completed, a plan can be developed for moderating transition problems. Training programs can be designed in cooperation with local education officials. Funds can be raised through bonds or loans for industrial development and recruitment can begin to attract firms to take advantage of the special talents of the defense workforce.

Adjustment Planning

Funding should not be provided for planning at any specific corporation, although single firms such as the M-1 tank plant in Michigan will often play a central role in the economic impact of defense cuts on the region. Each firm should take responsibility for its own strategic planning. Funding for the reuse of private resources should be done privately, though such planning might appropriately include representatives of the workforce.

The experience of firms who have attempted to shift their business from defense to civilian production suggests that converting firms and their employees in place is not a cost-effective strategy. Instead, pension plans should be made portable to allow any enterprise to employ the people made surplus by defense cuts. Former defense firms should not be sheltered from the marketplace—the economic legacy of Eastern Europe and the former Soviet Union are clear enough examples of the fallacy of this approach.

Adequate notice of defense cuts must be given—in most cases this can be done through the budget process and existing plant closing legislation. Each year, the White House prepares a defense guidance document from which the Department of Defense prepares a budget request for the next fiscal year and predicts funding requirements for four more years. The budget plan is available in January for the fiscal year beginning in October—essentially providing nine-months notice. While Congress does not make a final decision on the budget until late in the year, key points in the process should alert local officials to impending problems.

The contracting process forms an even greater cushion. Most contracting actions occur in the middle of a fiscal year and run into the following year. Thus, when Congress terminated production of the MX rail garrison program, the producer, Rockwell Industries, had a

contract that stretched for at least a year before funding would end. If the government were to attempt to terminate the contract earlier for convenience, the taxpayers would most likely be liable for termination costs received by the defense contractor. The current plant closing legislation passed by Congress in 1988 mandates a sixty-day notice for significant workforce reductions (over 1,000 employees).

Bridging assistance should be provided directly to employees affected by defense reductions. Engineers, as well as production workers, engaged in the defense business may need retraining and help marketing their skills to the commercial economy. Moreover, some workers may need to relocate to regions where their skills are in demand.

For both of these reasons, the government should provide assistance over and above unemployment assistance. The support should be targeted to regions with the highest incidence of defense cuts and the weakest commercial economic base. Yet, even those who are not in an economically disadvantaged region, or part of a lay-off of 1,000 employees, should have access to some assistance to affect this transition. The basic political dilemma will be to design a program that meets these principles without using more than 10 to 15 percent of the savings from defense budget reductions, thereby freeing funds for deficit reduction and funding of other government programs.

In the Fiscal Year 1993 Defense Authorization Act, defense subventions were cut by \$20 billion from the 1992 base and \$1.6 billion was allotted for adjustment assistance. This legislation incorporated many of the adjustment options discussed above. Given the growing political support for further reductions in defense spending and growing awareness of the employment dislocation that follows, specific economic conversion measures are likely to be adopted in the fiscal year 1994 defense bill as part of Clinton's economic renewal plan. Managing this program effectively and avoiding unnecessary spending will be a major challenge for the new administration.

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